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(54) **Wafer edge polishing composition and polishing method using the same**

(57) A polishing composition of the present invention, which is used in polishing the edge of a wafer for semiconductor devices, effectively suppresses remaining amounts of abrasives on the wafer. The polishing composition includes silicon dioxide, an alkaline compound, a water-soluble polymer, and water. The aver-

age primary particle diameter D_{SA} of the silicon dioxide is at least 40 nm. The ratio D_{95}/D_5 of the silicon dioxide is no more than 3.8. The value $D_{95}/D_5/D_{SA}$ of the silicon dioxide is no more than 0.07.

EP 1 405 885 A3



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
E	EP 1 403 351 A (FUJIMI INC) 31 March 2004 (2004-03-31) * paragraph [0009] - paragraph [0010] * * paragraph [0004] * * paragraph [0015] - paragraph [0017] * * table 1 *	1-20	C09G1/02 C09K3/14 H01L21/304
E	EP 1 424 727 A (FUJIMI INC) 2 June 2004 (2004-06-02) * paragraph [0001] * * paragraph [0004] * * paragraph [0019] * * paragraph [0026] * * paragraph [0034] - paragraph [0036] *	1-20	
X	WO 02/48279 A (SHOWA DENKO KK) 20 June 2002 (2002-06-20) * abstract * & EP 1 350 827 A (SHOWA DENKO KK) 8 October 2003 (2003-10-08) * claims 1-3,11 *	1-6, 8-10, 12-17	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
P,X	WO 03/068882 A (EKC TECHNOLOGY INC) 21 August 2003 (2003-08-21) * page 46, line 17 - line 31 * * page 47, line 10 - line 15 * * page 48, line 31 - page 49, line 24 *	1-6,8, 10,12-20	C09G C09K H01L
Y	WO 98/48453 A (ADVANCED CHEM SYSTEMS INT) 29 October 1998 (1998-10-29) * claims 1-3,5 *	1-20	
Y	EP 0 967 260 A (FUJIMI INC) 29 December 1999 (1999-12-29) * paragraph [0026] *	1-20	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 4 October 2004	Examiner Matthijssen, J-J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 02 2116

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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04-10-2004

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1403351	A	31-03-2004	JP 2004128070 A	22-04-2004
			EP 1403351 A1	31-03-2004
			US 2004127047 A1	01-07-2004
EP 1424727	A	02-06-2004	JP 2004128089 A	22-04-2004
			EP 1424727 A1	02-06-2004
			US 2004098924 A1	27-05-2004
WO 0248279	A	20-06-2002	JP 2002180034 A	26-06-2002
			JP 2002301655 A	15-10-2002
			EP 1350827 A1	08-10-2003
			WO 0248279 A1	20-06-2002
			US 2002129559 A1	19-09-2002
EP 1350827	A	08-10-2003	JP 2002180034 A	26-06-2002
			JP 2002301655 A	15-10-2002
			EP 1350827 A1	08-10-2003
			WO 0248279 A1	20-06-2002
			US 2002129559 A1	19-09-2002
WO 03068882	A	21-08-2003	US 2003162398 A1	28-08-2003
			WO 03068882 A1	21-08-2003
			US 2004006924 A1	15-01-2004
			US 2004025444 A1	12-02-2004
			US 2004029495 A1	12-02-2004
WO 9848453	A	29-10-1998	AU 7147798 A	13-11-1998
			TW 411518 B	11-11-2000
			US 6322600 B1	27-11-2001
			WO 9848453 A1	29-10-1998
EP 0967260	A	29-12-1999	JP 2001003036 A	09-01-2001
			CN 1240223 A ,B	05-01-2000
			EP 0967260 A1	29-12-1999
			KR 2000006327 A	25-01-2000
			US 2001003672 A1	14-06-2001

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82